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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,832	01/25/2002	Max Costa	5986/11147US1	1550

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EXAMINER	
UNGAR, SUSAN NMN	
ART UNIT	**PAPER NUMBER**
1642	

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/057,832	COSTA ET AL.	
	Examiner	Art Unit	
	Susan Ungar	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *06 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-102* is/are pending in the application.

4a) Of the above claim(s) *8,11-24,36-50,53,54 and 57-102* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-7, 9-10, 25-35, 51-52, 55-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *1*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The Election filed November 6, 2003 in response to the Office Action of October 6, 2003 is acknowledged and has been entered. Claims 8,11-24, 36-50, 53-54, 57-102 have been withdrawn from further consideration by the examiner under 37 CFR 1.142(b) as being drawn to non-elected inventions. Claims 1-7, 9-10, 25-35, 51-52, 55-56 drawn to an *in situ* method for identifying/diagnosing a diseased cell or tissue, cancer/melanoma said disease being associated with elevated CAP43 protein expression are currently under prosecution.

2. Applicant's election with traverse of Group I, Claims 1, 3-7, 9-11, 25-35, drawn to an *in situ* method for identifying diagnosing a diseased cell or tissue/melanoma, associated with elevated CAP43 protein expression, in the Election filed November 6, 2003 is acknowledged.

The traversal is on the grounds that pending claims 12, 36, 37 are also directed to *in situ* methods for identifying and/or diagnosing disease cells. In particular, claim 37, which directly depends from claim 25 specifies embodiments where the disease is granuloma. Dependent claims 12, 36, which depend directly from claim 1 and 25 specify embodiments where the disease is atherosclerosis, moreover claims 51-52 specify methods for identifying a cancer cell or tissue by detecting elevated levels of a Cap gene product, thus claims 1, 3-7, 9-12, 25-37 and 51-52 should be examined together in the application. The argument has been considered and has been found persuasive-in-part and claims 51-52 have been rejoined to Group 1 and upon further review, claims 2 and 55-56 have also been rejoined with the invention of Group 1. As drawn to the embodiments drawn to granuloma and arteriosclerosis, the arguments have been considered but have not

been found persuasive because the restriction requirement clearly separates out the inventions drawn to cancer from the inventions drawn to granuloma and arteriosclerosis since granuloma is specifically restricted in Groups 5-8 and arteriosclerosis is specifically restricted in Groups 9-12. Restriction of these groups from cancer is proper for the reasons of record. Although Applicant argues that claim 11, which is included in Group 1 is drawn to the specific embodiment where the disease is granuloma and therefore granuloma should be considered with the invention of Group 1, the argument has been considered but has not been found persuasive because claim 11 was clearly included in Group 1 as an inadvertent typographical error. A review of the body of the restriction requirement reveals that claim 11 is included in the Groups 5-8, all of which are drawn to *in vitro* or *in vivo* polynucleotide or polypeptide-based methods of identifying/diagnosing granuloma, while it is clear that Groups 1-4 are all drawn to *in vitro* or *in vivo* polynucleotide or polypeptide-based methods of identifying/diagnosing cancer/melanoma. Finally, Applicant argues that all of claims 1-58 are in fact linked by one or more common features and should be examined together in this application. This argument has been considered but has not been found persuasive for the reasons of record. Although the claims are all linked together, for the reasons of record restriction requirement among the linked inventions is proper. For these reasons the restriction requirement is deemed to be proper and is therefore made FINAL.

3. Upon review and reconsideration, and in order to clarify the record, Restriction of Group 1 to one of the following inventions is required under 35 U.S.C. § 121:

Claims 1, 25 link inventions 1A and 1B. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim(s), claims 1, 25. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Group 1A. Claims 1-7, 9-10, 25-35, 51-52, 55-56 drawn to an *in situ* method for identifying/diagnosing a diseased cell or tissue/cancer/melanoma said disease being associated with elevated CAP43 protein expression, classified in Class 435, subclasses 4 and 7.1.

Group 1B. Claims 1-7, 11, 25-33 drawn to an *in situ* method for identifying/diagnosing a diseased cell or tissue/granuloma said disease being associated with elevated CAP43 protein expression, classified in Class 435, subclasses 4 and 7.1.

Inventions 1A,1B are materially distinct methods which differ at least in objectives, method steps, reagents and/or dosages and/or schedules used, response variables, and criteria for success.

The inventions of Groups 19-35/37 and 1A/1B are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (I) the process for using the product as claimed can be practiced with another materially different product or (ii) the product as claimed can be used in a materially different process of using that product [see *MPEP* § **806.05(h)**]. In the instant case the antibody conjugate/antibody product as claimed can be used in a materially different process such as producing an antibody against the antibody/conjugate for removing the conjugate from an *in vivo* system.

The inventions of Groups 1A, 1B and 36 are not at all related because the methods of Groups 1A, 1B do not use the nucleic acid product of Group 36.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. A telephone call was made to Samuel Woodley, PhD (212-527-7700), on January 30, 2004 to request an oral election to the above restriction requirement. Dr. Woodley made an oral election to the above restriction requirement, an election was made with traverse to prosecute the invention of Group IA, Claims 1-7, 9-10, 25-35, 51-52, 55-56 drawn to an *in situ* method for identifying/diagnosing a diseased cell or tissue, cancer/melanoma said disease being associated with elevated CAP43

protein expression. Affirmation of this election must be made by applicant in responding to this Office action.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

8. Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed.

9. Applicant points out that claims 39-48 and 51-58 are not mentioned in the Restriction requirement. Examiner apologizes for the inadvertent oversight of these claims in this extremely complex restriction requirement and hereby joins claims 2, 51-52, 55 and 56 to Group 1, joins claim 2 to Group 2, joins Claims 38-48, 53-54 to

Group 3, joins Claims 53-54, 57-58 to Group 4, joins Claims 39-46 to Group 6, and joins Claims 39-46 to Group 10.

Objections

10. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter, see 37 CFR 1.75(d)(1) and MPEP 608.01(o). Claims 10, 35, 52, 56 recite the limitation of malignant fibrous histocytoma which limitation does not have antecedent basis in the specification as originally filed. The claims as filed in the original specification are part of the disclosure and therefore, if an application as originally filed contains a claim disclosing material not disclosed in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter. In re Benno, 768 F.2d 1340, 226 USPQ 683 (Fed. Cir. 1985).

11. The specification is objected to because of informalities such as (see FIGS 11[??] on page 80, line 8. Examiner has made an effort to identify these informalities but applicant must carefully review the specification to identify and indicate where other informalities may be found. Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention."

13. Claims 1-7, 9-10, 25-35, 51-52, 55-56 are rejected under 35 USC 112, first paragraph, as lacking an adequate written description in the specification.

Claims 1-7, 9-10, 25-35, 51-52, 55-56 are drawn to a method for identifying a diseased cell or tissue/cancer/melanoma comprising detecting in a cell or tissue an elevated level of a CAP43 gene product, polypeptide wherein said CAP43 gene product includes polypeptides comprising an amino acid sequence of one or more epitopes of a full length CAP43 polypeptide such as epitopes from SEQ ID NO:2, wherein said epitopes preferably contain amino acids corresponding to at least 5 residues of a full length CAP43 polypeptide (thus, the claimed CAP43 gene product is drawn to any polypeptide that includes five amino acids of SEQ ID NO:2 or an unidentified CAP43 polypeptide), the claims are further drawn to a CAP43 gene product encoded by a nucleic acid that hybridizes under unidentified hybridization conditions to the complement of SEQ ID NO:1, a nucleic acid at least 70% identical, at the nucleotide level to SEQ ID NO:1, wherein the amino acid sequence is at least 70% identical to SEQ ID NO:1. It is noted that the term "complement" is not defined by the specification, thus for examination purposes it is assumed that the term "complement" has the ordinary and customary meaning of the term understood by those of ordinary skill in the art, that is a complement may be either a complete or partial complement of a nucleotide sequence.

Although drawn to DNA arts, the findings in University of California v. Eli Lilly and Co., 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997) and Enzo Biochem, Inc. V. Gen-Probe Inc. are relevant to the instant claims. The Federal Circuit addressed the application of the written description requirement to DNA-

related inventions in University of California v. Eli Lilly and Co., 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). The court stated that "[a] written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula, [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials." Id. At 1567, 43 USPQ2d at 1405. The court also stated that

> a generic statement such as "vertebrate insulin cDNA" or "mammalian insulin cDNA" without more, is not an adequate written description of the genus because it does not distinguish the genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have previously indicated, does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is.

Id. At 1568, 43 USPQ2d at 1406. The court concluded that "naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material." Id.

Finally, the court addressed the manner by which a genus of cDNAs might be described. "A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus." Id.

The Federal Circuit has recently clarified that a DNA molecule can be adequately described without disclosing its complete structure. See Enzo Biochem, Inc. V. Gen-Probe Inc., 296 F.3d 1316, 63 USPQ2d 1609 (Fed. Cir. 2002). The Enzo court adopted the standard that "the written description requirement can be met by 'show[ing] that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics ....i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics. " Id. At 1324, 63 USPQ2d at 1613 (emphasis omitted, bracketed material in original).

The inventions at issue in Lilly and Enzo were DNA constructs per se, the holdings of those cases are also applicable to claims such as those at issue here. A disclosure that does not adequately describe a product itself logically cannot adequately describe a method of using that product.

Thus, the instant specification may provide an adequate written description of the claimed CAP43 polypeptide gene product, per Lilly by structurally describing a representative number of CAP43 polypeptide gene product by describing "structural features common to the members of the genus, which features constitute a substantial portion of the genus." Alternatively, per Enzo, the specification can show that the claimed invention is complete "by disclosure of sufficiently detailed, relevant identifying characteristics, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics."

In this case, the specification does not describe the CAP43 polypeptide gene product in a manner that satisfies either the Lilly or Enzo standards. The specification does not provide the complete structure of any CAP43 polypeptide gene product other than SEQ ID NO:1 or the gene product encoded by SEQ ID NO:2, nor any physical or chemical characteristics of the CAP43 polypeptide gene product nor any functional characteristics coupled with a known or disclosed correlation between structure and function. It is here noted that Zhou et al (Cancer Research, 1998, 58:2182-2189, IDS item) specifically states that the cellular functions of CAP43 are unknown. Although it is known that the putative encoded polypeptide has no transmembrane domain or zinc finger motif or metal-binding domain, it does have a new, functionally unidentified 10 amino acid repeat and a putative domain containing a phosphopentetheine attachment site (p. 2184, col 1). Although the specification discloses a single CAP43 polypeptide gene product, this does not provide a description of the broadly claimed CAP43 polypeptide gene products which are capable of identifying or diagnosing a disease/cancer/melanoma that would satisfy the standard set out in Enzo.

The specification also fails to describe the CAP43 polypeptide gene products capable of identifying or diagnosing a disease/cancer/melanoma by the test set out in Lilly. The specification describes only a single CAP43 polypeptide gene product capable of identifying or diagnosing a disease/cancer/melanoma. Therefore, it necessarily fails to describe a "representative number" of such species. In addition, the specification also does not describe "structural features common to the members of the genus, which features constitute a substantial portion of the genus."

Thus, the specification does not provide an adequate written description of the CAP43 polypeptide gene products capable of identifying or diagnosing a disease/cancer/melanoma that are required to practice the claimed invention. Since the specification fails to adequately describe the product which is to be assayed, the CAP43 polypeptide gene products, in order to diagnose or identify diseased tissue, cancer/melanoma, it also fails to adequately describe the method using said product.

14. If Applicant were able to overcome the rejections set forth above, Claims 10, 35, 52, 55 would still be rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of identifying/diagnosing lung cancer, kidney cancer, breast cancer, prostate cancer, melanoma, does not reasonably provide enablement for a method of identifying/diagnosing colon cancer, lymphoma or malignant fibrous histocytoma comprising assaying for overexpressed CAP43 polypeptide. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The claims are drawn to a method of identifying/diagnosing colon cancer, lymphoma, malignant fibrous histocytoma comprising assaying for overexpressed CAP43 polypeptide compared to control.

The specification teaches that assay of primary colon cancer tissue disclosed that CAP43 polypeptide is underexpressed in colon cancer compared to normal control, see Table 1, p. 75. Table 1 further discloses that malignant fibrous histiocytoma expresses CAP43 at the same level as expressed by benign colon tissue. Table 3 discloses that CAP43 is present in 3/3 lymphocytes assayed. One

cannot extrapolate the teaching of the specification to the scope of the claims because the heterogeneity of cancers is well known in the art. Although numerous cancers have been shown to overexpress CAP43 polypeptide, given that colon cancer clearly underexpresses the polypeptide, it would appear that the state of expression of the polypeptide can not be extrapolated to all cancers from the information in the specification. Given the information in the specification, it could not be predicted, nor would it be expected that all types of cancer would overexpress CAP43 polypeptide compared to normal controls. Given the above, in the absence of objective evidence demonstrating that malignant fibrous histocytoma and lymphoma overexpress CAP43 polypeptide compared to normal control, it could not be predicted, nor would it be expected, that the invention could function as claimed to identify/diagnose those cancers. In view of the above, one of skill in the art would be forced into undue experimentation to practice the claimed invention. Applicant is invited to submit objective evidence demonstrating that lymphoma and/or malignant fibrous histocytoma overexpress CAP43 polypeptide when compared to normal control in order to overcome this rejection.

Claim Rejections - 35 USC § 101

15. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

16. Claims 10, 35, 52, 55 are rejected under 35 USC 101 because the disclosed invention is inoperative and therefore lacks utility.

The claims are drawn to a method of diagnosing/identifying colon cancer comprising assaying for an elevated level of a CAP43 gene polypeptide gene product. The specification teaches that assay of primary colon cancer tissue discloses that CAP43 polypeptide is underexpressed in colon cancer compared to normal control, see Table 1, p. 75. The invention is inoperative.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
> ~~(f) he did not himself invent the subject matter sought to be patented.~~

18. Claims 1-7, 9, 25-34, 51, 55 are rejected under 35 U.S.C. § 102(e) as being anticipated by US Patent No. 6,376,169.

The claims are drawn to a method for identifying/diagnosing a diseased cell or tissue being associated with abnormal CAP43 elevated level of CAP43 gene product polypeptide (claims 1, 25), wherein the polypeptide is encoded by SEQ ID NO:1, a nucleic acid that hybridizes to the complement of SEQ ID NO:1, a nucleic acid at least 70% identical to the nucleotide level to SEQ ID NO:1 (claims 2 and

26), wherein the polypeptide comprises SEQ ID NO:2 or an amino acid sequence at least 70% identical to SEQ ID NO:2 (claims 3 and 27), wherein the polypeptide is detected by antibody (claims 4 and 28), detectably labeled antibody (claims 5 and 29), wherein the binding of the antibody is detected (claims 6 and 30) wherein the antibody is applied *in situ* (claim 7), wherein the diseased cell or tissue is a cancer cell or tissue (claims 9, 34, 51, 55), wherein the sample is a cell, tissue or body fluid/blood (claims 31-33).

It is noted that *in situ* analysis is understood, for the purposes of examination, to be an *in vitro* assay done on a sample obtained from an individual such as a biopsy, given the teaching on p. 46, lines 24-25 of the specification.

It is noted that RTP/DRG1/Ndrl gene product is 100% identical to SEQ ID NO:2 (see us-10-057-832-2.rsp, result 1 attached hereto).

US Patent No. 6,376,169 teaches a method of identifying/diagnosing a diseased cell or tissue being associated with abnormal RTP/Drg1 elevated level polypeptide gene product expression (col 1, lines 50-62) wherein the specification further teaches that the up-regulated expression of Drg1 and its products in response to hypoxic conditions occurs in a wide range of cells and neoplastic cells in general (col 7, lines 15-18). The invention can be used for diagnosis for diseases and conditions in which the vasculature of the affected tissue or system is altered so that the blood flow is reduced and the tissue is rendered hypoxic. Diseases that can be diagnosed by the methods of the invention include, preclampsia, cancer, stroke, heart disease, sleep apnea, anemia, increased risk of metastasis or tumor progression, myocardial infarction, stroke, thrombosis, poisoning, altitude sickness

(col. 7, lines 35-65). It is noted that the patent specifically claims a method for diagnosing preclampsia comprising measuring an RTP/DRG1 gene product level in a biological sample obtained from a pregnant woman and comparing said level with the level in a reference sample wherein an increase in RTP/Drg1 gene product level compared to reference sample is indicative of preclampsia, wherein the gene product is a polypeptide (see claims 11 and 15). The specification teaches that a biological sample obtained from an individual for the purpose of analysis may be any tissue sample, cell or bodily fluid in which the substance of interest may be present. Typical biological samples include biopsies, blood, serum, plasma, saliva, urine, semen (col 9, lines 3-15). Further, according to the invention RTP/Drg1 undergoes up-regulation of expression in response to a hypoxic condition, wherein the gene product may be a protein (col 9, lines 16-41), wherein the substance selected can be quantified directly or indirectly using any suitable method which measures the number of molecules of a specific protein and compares that number relative to a reference number (col 9, lines 43-51). Protein levels can be assayed using any suitable method known in the art. Antibody-based techniques include immunohistological and immunohistochemical methods wherein detectable labels can be conjugated to a secondary antibody which binds to the primary antibody and thus detectably labels that antibody or the primary antibody can be detectably labeled (paragraph bridging columns 10 and 11). Although the reference does not specifically state that RTP/Drg1 is encoded by SEQ ID NO:1, the claimed CAP43 polypeptide appears to be the same as the prior art polypeptide, absent a showing of unobvious differences. The office does not have the facilities and resources to

provide the factual evidence needed in order to establish that the product of the prior art does not possess the same material, structural and functional characteristics of the claimed product. In the absence of evidence to the contrary, the burden is on the applicant to prove that the claimed product is different from that taught by the prior art and to establish patentable diffrences. See In re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ 2d 1922 (PTO Bd. Pat. App. & Int. 1989).

19. Claims 1-7, 9-10, 25-35, 51-52, 55-56 are rejected under 35 USC 102(f) because it appears that applicant did not invent the claimed subject matter.

The claims are drawn to a method for identifying/diagnosing a diseased cell or tissue being associated with abnormal CAP43 elevated level of CAP43 gene product polypeptide (claims 1, 25), wherein the polypeptide is encoded by SEQ ID NO:1, a nucleic acid that hybridizes to the complement of SEQ ID NO:1, a nucleic acid at least 70% identical to the nucleotide level to SEQ ID NO:1 (claims 2 and 26), wherein the polypeptide comprises SEQ ID NO:2 or an amino acid se1quence at least 70% identical to SEQ ID NO:2 (claims 3 and 27), wherein the polypeptide is detected by antibody (claims 4 and 28), detectably labeled antibody (claims 5 and 29), wherein the binding of the antibody is detected (claims 6 and 30) wherein the antibody is applied *in situ* (claim 7), wherein the diseased cell or tissue is a cancer cell or tissue (claims 9, 34, 51, 55), wherein the cancer is lung cancer, colon cancer, kidney cancer, breast cancer, prostate cancer, melanoma, lymphoma or a malignant fibrous histocytoma (claims 10, 35, 52, 56) wherein the sample is a cell, tissue or body fluid/blood (claims 31-33).

It appears that Cagul (Dissertation Abstracts International, 2002, Vol 63, No 8B, p. 3664) in a PhD dissertation, wherein Inventor Costa was his thesis advisor, teaches the method as claimed, wherein CAP43 overexpression is found in primary tumor cells compared to normal controls and wherein the specificity of CAP43 for cancer outweighs that of other proposed tumor markers. Since it is commonly understood in the art that a PhD thesis is the writer's own work and contribution to the art, it appears that Dr. Cagul is the inventor of the claimed invention.

20. No claims allowed.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Ungar, PhD whose telephone number is 571-272-0387 The examiner can normally be reached on Monday through Friday from 7:30am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvette Eyler, can be reached at 571-272-0871 The fax phone number for this Art Unit is (703) 305-7230.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Susan Ungar
Primary Patent Examiner
February 3, 2004